The monetary views of Paul Einzig

Dominique Torre

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Dominique TORRE*

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Abstract

Paul Einzig was born in 1897 in Brasov but comes to London in 1919. From 1920, he begins to write articles for scientific reviews, especially *The Economic Journal*, while he contributes more regularly to *The Financial News*, *The Financial Times* or *The Banker*. From this period to his death in 1973, he writes also many books, on very diverse subjects but devoted for the major part to monetary analysis and international finance. This paper concentrates on two subjects recurrently developed by Paul Einzig. The first is the analysis of forward exchange market where Einzig observes anomalies in the covered interest rates parity. These observations, in accordance with those of Keynes, initiate a long controversy - still not closed -, on the origin of these anomalies. The second subject is less technical and more fundamental: what are in practice the respective properties of the different possible external exchange regimes? Einzig provides all his life long historical and analytical arguments to the reader interested in this question. He observes and comments regularly and in detail the crises and failures of different monetary arrangements. These observations and analyzes are still useful at a time when, after many years of trust in the corner solutions (free flotation and monetary unions) the international community finds necessary to elaborate adequate regulations for the Eurozone policy-mix, or to control the excessive instability of the international capital flows.

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1 Introduction

"His style is limpid, his ideas are common-sensical, his conclusions definite and clear. If he panders to popular tastes at all, it is by way of

*University of Nice Sophia-Antipolis - GREDEG - CNRS, 250 rue Albert Einstein, 06560 Valbonne, France., E-mail: dominique.torre@gredeg.cnrs.fr

a certain over-emphatic dramatization of events. The strong white light he casts upon his characters causes them to throw shadows blacker than would appear by common day. But this is a fault altogether on the right side. We know exactly where we are with him, and allowances are easily made" (J. Robinson, 1936, p. 122)

In 1920, the Romanian Government withdraws Austro-Hungarian Kronen and Russian Rubel denominations still circulating in the new *Romania Mare*, and defines the Lei notes as the only legal tender on the whole country. In London, J.M. Keynes and *The Economic Journal* accept the proposition of a 23 years old journalist of *The Financial News* born in Transylvania to report the situation and analyze its consequences on the Romanian economy. This is the second academic intervention of Paul Einzig after a first short paper in the same *Economic Journal* on the attempt by the new Soviet Union to propose an intermediary of exchange founded on labor-tickets (Einzig, 1920a). These two early short papers will be followed by many other texts in *The Economic Journal* and elsewhere: about 60 books written until 1972 and approximatively the same number of academic papers, without considering its regular production as columnist of *The Financial News*, *The Financial Times* and *Commercial and Financial Chronicle*.

One century after, the paper Paul Einzig wrote on the monetary reform in Transylvania is still of great interest for the reader. The author relates in a direct style one the most astonishing experiences of currency sterilization of the after-war period. New citizens from the previous Hungarian areas then hold Austrian Kronen from the war and pre-war period. Due to the economic uncertainty associated with the Austrian defeat, the unofficial rate of convertibility of these Kronen in Romanian Lei is very low in Romania. A monetary reform is then announced by the Romanian Government with the necessity for each holder of Kronen notes to declare the amount he/she wants to convert in Lei at the official rate before the announce of this rate. The incentive to declare is that from the end of the conversion period, the Romanian Lei will be the only legal tender for internal transactions. But given the illegal rate, the Kronen holders expect a low official conversion rate but also a subsequent tendency of the Kronen to appreciate in Lei on the external market. A small amount of the Kronen holdings is then declared to the authorities: the holders of the rest rush on shops and spend as many Kronen as they can before the date of conversion. The conversion is then realized in the following way: only 60% of the declared holdings in Kronen are immediately converted in Lei by the monetary authorities. The remaining 40% are exchanged against non-negotiable temporary receipts. Additional amounts of Kronen are accepted for conversion - more of them from shopkeepers victims of the rush -, still against non-negotiable effects. Finally, around 60% of the Kronen previously in circulation are withdrawn against receipts, without any clear date of definitive conversion. But the more surprising part of Einzig report is still to come. As 2 Kronen are exchanged against 1 single Leu, and given the number of receipts distributed to the previous Kronen holders, the new price in Lei of the commodities fixed at one half of the old price in Kronen in Transylvania, corresponds to a decrease of the purchasing power of the Kronen holders. As this measure does not affect equally all the population, the Romanian conversion

generates - at least in the short run - a negative effect of wealth to the detriment of the previous Kronen holders. But as the rate of conversion of the Kronen is probably overevaluated given the current situation of the Austria, this redistribution is not macroeconomically speaking so important and it has the advantage of withdrawing rapidly all the Kronen holdings from public or private circulation. These last comments are from the author of the present paper and not from Einzig, probably too young and lacking from self-confidence to rise controversial questions in this sensible circumstance. Einzig will have other occasions to lose his shyness. He however had few occasions to write more academic papers on the situation in South-Eastern Europe. The motives can be found in his autobiography: "The Economist, after having published three of my articles, returned several of them, [...] Keynes [as editor of *The Economic Journal*], too, rejected one or two of my articles. The explanation of this [...] was simply that at this time there was very little interest in Britain in the current economic affairs of Hungary or Roumania, and these were practically the only countries about which I was able to write with any degree of first-hand knowledge and authority. I had the monopoly of that market, but it was an extremely narrow market, and saturation point was soon reached" (Einzig, 1960, p. 19). This is probably the reason why Einzig writes his first and last academic paper on the situation in Balkanic countries at a time when he is sill not Doctor.

Paul Einzig was born in 1897 in Brasov, Transylvania, at a time when this Romanian region was still a part of Hungary. He is educated at the Oriental Academy of Budapest where he begins to work as journalist during the WW1. He comes to London in 1919 where he is rapidly employed by *The Financial News* and finds an early editorial success with the publication of two articles in *The Economic Journal*, he is nominated as the Paris correspondent of *The Financial News* where he stays to prepare a *Doctorat* thesis at *La Sorbonne* under the supervision of Louis Germain-Martin University. He defends his thesis in 1923 on the movements of prices in France from 1914 with Bertand Nogaro in his committee (Einzig, 1960, p. 40). He becomes the foreign editor of *The Financial News* in 1923, then continues a carrier devoted to financial journalism, enhanced by frequent interventions as author of articles of *The Economic Journal* or other academic reviews. He meets and corresponds with the best British economists - including Keynes -, and begins to write this unreal number of books, ranging from *The Theory of Forward Exchange* in 1937 that he makes dynamic in 1961 (*A dynamic Theory of Forward Exchange*) to numerous less ambitious books devoted to a specific question or event related to the successive monetary and financial systems he will observe until his death in 1973. From 1939, he is correspondent of *The Financial Times* and maintains a continuous link with this review until he retires in 1956. During this period and after, he continues to write books and articles, overall on financial and monetary subjects but even on more unexpected topics like this strange (see *The economic consequences of automation* in 1956).

The rest of this paper is not an attempt to analyze synthetically the monetary and financial views of Paul Einzig. Given the moving environment to which he is obliged to adapt his views, there are too pages to read, comment and put in

perspective to do this in a single paper. We then choose to focus on two contrasting topics of Einzig. The first (section 2) is very technical and apparently limited in : this is the question of the covered interest rate parity of which Einzig becomes one of the specialists from the thirties. The second (section 3) is broader in scope: this is the comparison between diverse external exchange arrangements. We then conclude (section 4).

2 External exchange market imperfections and the interest rate parity issues

The name of Paul Einzig is still present in the contemporary academic debates but only in a very specialized subject: Einzig contributes in the twenties to the analysis of forward exchange rates and formulates the so-called "Keynes-Einzig conjecture". During many years, Einzig is indeed fascinated by the mechanisms of foreign exchange market. After a decade of observation of this market, he considers from the mid-thirties that his main purely analytical contribution to economic analysis will be located in this field.

2.1 The post-war evolution of gold points

During the twenties, after the return of the Sterling to Gold, Einzig publishes an article and many smaller notes in the *Economic Journal* devoted to comment the evolution the Gold points (Einzig 1927a, 1927b, 1928, 1929, 1931), then to elucidate the deviation of those points from their theoretical levels. These meticulous observations are devoted to observe any changes in the coordination rules of the external exchange market from the return to convertibility of the Pound. Einzig indeed observes significant changes in the Gold points between London and New-York. "It is a common but superficial conception to regard gold points as something essentially stable, bearing a fixed relation to mint parities. In reality, even before the war, when the factors determining the gold points were more settled than at present, gold points were subject to changes" (Einzig, 1927a, p. 133). Einzig begins to attribute these changes to the increase of the freight, of the insurance and the interest (Einzig, 1927a). In 1928, then in 1929, he comments the new and important movements of Gold among Central Banks, more or less associated with the difficulties of The Bank of England to maintain its too high parity. But for the moment, only gold points seem to interest Einzig. During this period, Ei,zig deplores the extent and the rapidity of the changes of the gold points, due to the tendency of Central banks to move large amounts of gold under conditions they determine "independently" from market forces: "in certain cases the exceptional measures of interference are explained by the necessity for some central banks to increase immediately their gold stocks, so as to be able to maintain the gold standard [...] In other instances the policy is inspired by a desire of saving transport costs. This was the case of the triangular gold transactions arranged in May and June 1929, between the *Reichsbank*, the Federal Reserve Bank of New York, and the *Bank of France*, and, to a small

extent, between the two former and the National Bank of Belgium" (Einzig, 1929, p. 380).

2.2 The covered interest rate parity

With the first effect of the Great Depression and the progressive withdrawal of the major countries from the Gold Exchange Standard during the early thirties, gold points stop to play a stabilizing role at the international level and Einzig is now interested in the new stabilizing mechanisms, in a word of floating exchange rates. But with gold points, Einzig has understood the role of arbitrage mechanisms in the foreign exchange markets. He finds rapidly that, with inconvertible currencies, the domestic and external short term interest rates provide a new possibility of international arbitrage when there is a possibility to conclude forward currency exchanges. This is the (covered) interest rate parity principle already known by the major part of practitioners in the XIXth century and already referred by Keynes in a newspaper article in 1922, then in his 1923 *Tract on Monetary Reform* (Keynes, 1923).

In 1937, Paul Einzig publishes his first theoretical book, on the only technical topic that he will choose to develop during his long life as economist and columnist: the forward exchange market. The book begins by a preface in which Einzig acknowledges his friends bankers for having read and controlled the manuscripts: Einzig is still not converted (he will never be) into an academic economist and he feels that the management practices of gold standard must be found in practitioners experiences more that in reading contemporaneous specialists of monetary analysis. He adds only the names of three academic economists to his list of acknowledgments: John-Maynard Keynes, Giovanni Demaria the young future editor of the *Giornale degli Economisti*, and Henry Parker Willis, the old professor of Washington and Lee university, adviser of the first real-billist Governors of the Fed of New-York and Washington.

While the topic of *The Theory of Forward Exchange* is rather technical, the style of the book is not. Einzig presents to the reader the arbitrage mechanisms and its imperfect application during the interwar in a very literary form, like he will do all his life to address other questions of finance or monetary policy. But he also proposes a long appendix presenting weekly quotations of the spot and forward exchange rates for one month and three months of the US dollar, French franc, German mark, Italian lira, Dutch gulder, Swiss franc and Belgian franc in sterling. These data are extracted from the weekly circular published by the Anglo-Portuguese Colonial an Overseas Bank, Ltd. which provides at this time the only continuous published record from the beginning of 1921. Einzig also collects and presents the London Bank rate and the Bank rates in New York, Paris, Berlin, Italy, Holland, Switzerland, Belgium from 1920 to 1936. With these data, he can calculates the discount rate parities between London and these other places. Einzig also publishes monthly averages of market rates of discount for three months' prime bills in the various centers, compiled from the Statistical Yearbook of the League of Nations

and other sources and call money rate parities between London on one hand and New York, Paris, Berlin, Italy, Holland, Switzerland, Belgium on the other hand (Einzig, 1937). This impressive amount of data and evaluations is devoted to point out the deviations of the foreign exchange market during the thirties from an arbitrage equilibrium determined by the covered interest rate parity principle.

2.3 The imperfections of the external exchange market

In the thirties, arbitrage mechanisms are indeed currently used by practitioners and the interest rate parity has been presented by academic economics. Frenkel and Lewich (1975) provide a long quotation of David Ricardo's 1811 *Reply to Mr. Bosanquet* where arbitrage is presented as the adapted form of competition on the foreign exchange market. With the development of forward exchange markets in the nineteen century, arbitrage on interest rates becomes a well known strategy and allows even Central banks to manage in an adapted way Gold Exchange in the prewar period (Boyer-Xambeu, 1997). In normal time, "there exists a neutral band around the traditional line [between the absolute differential of interest and the relative differential of exchange rates - forward and spot] within which no covered arbitrage is profitable. Such a band is implied if there are transaction costs and/or if some (or all) of the elasticities of the demand and the supply (of securities and foreign exchange) are less than infinite" (Frenkel and Levich, p. 337). Keynes is the first to refer in the 1923 *Tract* to the structural tendency of an interval around the right rate of exchange determined by the covered interest rate parity around which the "deviations from covered interest rate parity are not arbitraged. He attributes this fact to the imperfect elasticity of supply of arbitrage funds on foreign exchange markets. Keynes provides the first data able to verify the conjecture and attributes these imperfections to the lack of sufficient capital devoted to arbitrage activity. As evident in the following excerpt quoted by Peel and Taylor (2002), Keynes refers to semi-rational behaviors and the lack of liquidity of markets to explain this lack of precise arbitrage:

> It must be remembered that the floating capital normally available, and ready to move from centre to centre for the purpose of taking advantage of moderate arbitrage profits between spot and forward exchange, is by no means unlimited in amount, and is not always adequate to the market's requirements... [An] abnormal discount can only disappear when the high profit of arbitrage between spot and forward has drawn fresh capital into the arbitrage business. So few persons understand even the elements of the theory of the forward exchanges that there was an occasion in 1920, even between London and New York, when a seller of spot dollars could earn at the rate of 6 percent per annum above the London rate for short money (Keynes 1923, pp. 107-108).

Einzig comments the observations of Keynes and has another explanation to propose: these abnormal margins around the forward exchange rate resulting from its arbitraged level could be associated to the "widespread feeling of optimism that

set in after the war regarding the future of the depreciated currencies. It was generally taken for granted that not only sterling, but the franc and the lira, even the German mark, would eventually return to their Purchasing Power Parities, and even to their pre-war Mint parities. Speculative anticipation of the rise of these currencies resulted in a persistent premium on forward sterling against dollars, and in a premium on the forward lira, mark, etc., against both sterling and the dollar. Ample opportunities were thus afforded for highly profitable interest arbitrage with the exchange risk covered (Einzig 1937, pp. 67-68).

But Paul Einzig provides also his own stylized facts and particularly concentrates his observations on the important anomalies on the French market in 1935-1936. "As the devaluation of the franc had been widely expected, forward francs were at a persistently heavy discount from May 1935 until the devaluation in September 1936... The result is that it had become highly profitable for French banks to use their liquid resources in interest arbitrage" (Einzig, 1937, p. 193). In a 2002 paper, David Pell and Mark Taylor use non-linear econometric methods to verify the conjecture of Keynes and Einzig. Their results support their observations: there exists a large margin of 0.5% around the "parity line" in which no arbitrage is made. Peel and Taylor do not select among the possible interpretations (inefficiency of the market, transaction costs, relative illiquidity of banks) but conclude that each one could be supported in the interwar context. The debate has a new episode with the conjecture of Lyons (2001): the "forward bias" will not be arbitraged until it only integrates an excess return over the other comparable trading strategies. This conjecture seems now supported by the econometric tests realized by Paya, Peel and Spiru (2010) on 1922-1924 data.

2.4 Modern explanations of the anomaly

In 1961, twenty-four years after, Paul Einzig opens a second and definitive chapter to his analyzes of interest rate parity in a new and voluminous book entitled *A Dynamic Theory of Forward Exchange* (Einzig, 1961). The book is presented to the reader as a didactic and exhaustive work: it offers a general synthesis of all the developments that the prewar and postwar literature devotes to interest rate parity. The chapter 13 then identifies 10 different motives to an imperfect (covered) interest rate parity. The following chapters try to present elements for a dynamics of interest rate parity. "Dynamic theory in a methodological sense explains the process by which forward margins tend to remain in given circumstances in the close vicinity to their Interest Parities" (Einzig, 1961, p. 276). In these developments, Einzig encompasses a large range of causes of moves of the interest rates, forward or spot exchange rates, and the influence each variable has on the other ones.

In realty, the distinction made by Einzig between the static approach of interest rate parity and the dynamic one refers mainly to the sense of the causality between forward exchange rates and the other variables in move at each change of interest rate parity: "under a dynamic theory of forward exchange forward rates are liable

to affect spot rates, and in doing so they tend to produce international transfers of funds, gold movements, changes in the levels of interest rates, in the trade balance and in the price levels" (*Ibid*, p. 270). For instance, this "dynamic theory" integrates all the causes of moves of forward rates with non-perfectly flexible spot rates: "under the Bretton Woods system of exchange stability the role played by the Foreign Exchange system is admittedly less dynamic than under a system of fluctuating exchanges, but more dynamic than under the pre-1914 gold standard, or even under the partly inter-war gold standard" (*Ibid*, p. 267).

Although the contemporaneous reader is frequently disappointed by the style of Einzig (few effort to synthesize the arguments, repetitions, lack of rigorous proofs, few illustrations...), Einzig progressively escape from the initial discussion of the sense of the causality between the four variables in relation in the covered interest rate parity and to evaluate the real effects of forward exchange market, in the case of the Bretton Wood system. The report is particularly negative for an early specialist of this kind of market: "forward exchange is liable to affect interest rates or relative level of interest rates in a disturbing senses. It may tend to raise interest rates where they are already too high, and to lower them when they are inconveniently low. It is liable to affect the volume of credit in a sense that reduces employment and output. Resistance to pressure on the gold reserve caused by covered arbitrage necessitates credit squeeze and this means a setback in the expansion of the output and in the rise of the standard of living" (*Ibid*, p. 281). In the following lines, after a discussion of specific effects of forward exchange market specifically linked to the residual role of gold in the Bretton Woods system, Einzig points out the origin of these destabilizing effects: they are "psychologically and technically self aggravating. The more funds are lost though interest rates arbitrage the more speculation is likely to increase against the currency concerned. This tends to widen the forward discount which again means more loss of gold through interest arbitrage" (*Ibid*, p. 282).

The book ends up with an analysis of the way each national monetary authorities have managed their forward exchange market during the inter-war period. The method of the book but also its style are evidently of another age, and it probably appeared as such even in 1961[1].

Half a century after, in many circumstances the covered parity of interest rates still does not apply. During the 1990 decade, a first set of articles have pointed out the effect of transaction costs on these imperfections but other large anomalies remained unexplained (Abeysekera and Turtle, 1995, Blake, 1998). More recently, new observations have oriented the explanation of the puzzle toward the lack of any risk of counterpart in the covered parity relation. The 2007-2008 financial meltdown has for instance renewed the observations on the way covered interest rates arbitrage

[1]Remind that 1961 was also in macroeconomics the year of publication of the John Muth paper announcing the rational expectations revolution and in microeconomics the moment chosen by the *Journal of Political Economy* to publish the first Stigler proposals on "the Economics of information", announcing the next reformulation of a new paradigm in Economics. Compared with these texts, the old fashioned book of Einzig comes from another age.

integrates uncertainty and finally departs from its deterministic expression (Coffey, Hrung, and Sarkar, 2009, Mancini and Ranaldo, 2011, Bhargava, Dania, and Malhorta, 2011). During this time, the financial crisis then resulted in a "breakdown of arbitrage transactions in the international capital markets [...] that stems partly from lack of funding and partly from heightened counterparty credit risk, in this case the risk of counterpart affecting some of the parties involved in the transactions of loans" (Coffey, Hrung, and Sarkar, 2009). This solution has however to be confirmed as the more technical explanations of Pippenger (2011). The covered interest parity anomalies still remain a puzzle for macro-economists: while any departure of the market from its arbitrage equilibrium generates stabilizing forces, many cases of incomplete arbitrage are still observable.

3 The choice of a sustainable monetary regulation

From his initial comments on gold points until is books on the failure of Bretton Woods, Einzig is overall - as an academic economist but also as a columnist - a specialist of monetary regimes and exchange rate systems. This interest begins with the return of the Sterling to gold, then continues with the period of inconvertibility of the thirties. During the war, Einzig is interested on the future international monetary arrangements. While not initially satisfied with the general concept of Bretton Wood when Keynes was working on it, he finally considers this form of soft pegs as a way to avoid the interwar problems and feels disappointed with its failure in the early seventies. We present its analysis of the two types of systems he finally criticize the most: the "decentralized" Gold Exchange Standard and the floating exchange system. In both cases, the views of Einzig are sometimes expressed in a polemical style that discourage the reader. We have then tried to abstract the analytical arguments of Einzig from the context in which they are inserted in his books. This is also a way to understand why Einzig, who criticizes without restraint the exacerbation of national interests as well as the genuine imperfections of diverse monetary arrangements, can also present in other places more elaborate and open-mind views on the objective and the means of monetary policy.

3.1 The risks of a decentralized management for a common currency

During the twenties and the early thirties, the official international monetary regime is the Gold Exchange Standard. This regime is adapted by the US and approved by UK as soon as this country announces its objective of a return to Gold of the pound at the prewar parity. When this return is made effective in 1925, the US dollar and the Sterling are considered as equivalent to gold and accumulated by Central Banks as reserve currencies. France, then Germany and quite all European countries progressively decided to leave free flotation and to join US and UK in an extended club of the currencies pegged to gold, frequently after a phase of stabilization and the definition of a new international gold content of the national currencies. The French stabilization, *de facto* from 1926, *de jure* in 1928, was the final step of more

or less regular depreciation from the war to 1925, ended by a stabilization, a formal devaluation with a simultaneous return to external convertibility. The temporary success of the French *Franc Poincaré* maintained France during few years in a better situation than other the countries who chose deflation against devaluation in their return to gold, and overall than UK which was obliged to make British pound inconvertible from 1931. A the end of the story, *i.e.* during the diffusion of the Great Depression effects, France and the countries whose Central Banks chose devaluation will be finally penalized for the same reasons that depressed UK in the late twenties: they waited to much before leaving convertibility.

In 1931-1932, between the suspension of convertibility in UK and in countries having chosen devaluation, France took a temporary commercial and economic advantage from its opportunism without any attempt to adapt its own monetary policy to the new conditions created by the difficulties of UK. This analyis of this free riding of France then became one of the major topic of Paul Einzig from the early thirties. His 1932 book *Behind the Scenes of International Finance* (Einzig, 1932) is the first to present his views of the situation. The polemical style adopted by Einzig had many bad consequences for the has also the advantage of presenting clearly his assertions that he justify more with relevant stylized facts than with quantitative data not available. The central part of the argument is quite simple:

> "The financial warfare conducted by France in order to acquire political power over Europe has largely contributed to the development of the economic depression since 1929, and has been the direct cause of its accentuation during the second half of 1931 into a crisis without precedent [...] It was the French gold-hoarding policy which brought about the slump in commodity prices, which was the main cause of the economic depression; that it is the unwillingness of France to co-operate with other nations which has aggravated the depression into a violent crisis; and that it is her unwillingness to co-operate is still the principal obstacle to an economic recovery" (Einzig, 1932, p. v and vii)

The brilliant columnist frequently substitutes for the academic economist. The book "contains highly controversial statements of fact [Einzig] was unable to substantiate until some quarter of a century later" (Einzig, 1960a, p. 124). With distance, the capacity to defend all the detail of the criticism Einzig makes of the French attitudes during this period is now less important than the general analysis of soft pegs which can be deduced from this book of Einzig. The main argument of Einzig is indeed in this book that the failure of the system is the consequence of a lack of cooperation before the devaluation of the pound. Obviously, he devotes all its energy to shed light on the opportunistic attitude of France before from 1926.

The attitude of France before 1928 devaluation

Einzig identifies for instance 7 causes for the increase of the gold stock in France from 1926. A part of them is probably overestimated: for instance, the effect of

reparation that Einzig consider as excessive is now analyzed as more important psychologically (it maintained Germany in a wrong position of submission and inferiority) than it was fundamentally on the relative economic situations of France and Germany. The effect of repatriation of French capital and the France's profit on foreign holding in francs, as the "artificial export surplus through the stabilization of the franc at an unduly low level" (Einzig, 1932, p. 38) had probably more weight. Einzig adds (this is the seventh cause) that "French authorities were successful in resisting to [the adjustment of French prices to the world level] by means of preventing the influx of gold from producing its normal effect". This sterilization of gold then maintained the competitive advantage of France until the effect of deflation in UK and US in 1931. The major part of the motives exhibited by Einzig are then a simple consequence of the "competitive devaluation" chosen by French government to accumulate competitive advantages during the before stabilizing and turning to gold.

The attitude of France after 1928 devaluation

Einzig is more severe and has more robust arguments against France when he analyzes the motives of the movements of Gold after the French franc return to Gold. "Between 1929 and 1931 the French authorities made extensive use of the weapon of gold withdrawals in pursuing a political end". At this level, Einzig does not incriminate directly French authorities but French banks influenced them. "It is widely known that French banks usually obey the wishes with the interests of their shareholders or their clients[...] They certainly would not hesitate to take a lint from the authorities to withdraw their funds from London at a moment when in doing so they could assist the policy of their country" (*Ibid*, p. 56). For Einzig, these movements are not the result if convergent but unarticulated decisions but the effect of a real attempt to use gold and reserves as an economic and political weapon:"while in the case of the United States, the inflow of gold was merely due to the absence of any defensive measures against the current, in the case of France, it was the result of a deliberate policy which began with the stabilization of the franc at an unjustifiably low level and continued through the crisis" (*Ibid*, pp. 69-70). This mal-distribution of gold and its excess hoarding by France is for Einzig at the origin of the world deflation of the years 1929-1930: "undoubtedly, there have been a number of individual causes responsible for the fall of prices in every individual group of commodities, but the existence of these factors does not dispose of the theory that the general downward trend was mainly due to the monetary factors" (*Ibid*, p. 68). Finally, given the initial low level of convertibility of francs and the resulting movements of gold from UK, "for a long time, France remained comparatively immune for the repercussion of the world-wide economic depression" (*Ibib*). it is interesting to note at this point that Einzig does not criticizes France to have chosen to benefit momentarily from the good effects of inflation and depreciation: "in early stages, inflation tends to be beneficial to producers as it enables them to repay debt in depreciated currency [...] As France succeeded in stopping at the right moment, her industry and agriculture had all the benefit of the depreciation of the currency - at the expense of the rentier, of course - without any of the disadvantages. French producers were thus better equipped to face the depression than

producers of most other countries" (Ibid, pp. 70-71).

Einzig also considers that the Bank of International Settlements headed by Pierre Quesnay has also been built to "come entirely under French influence and that it would become the instrument of French foreign policy" (*Ibid*, p. 62). As illustrations, the choice of Basle against London for the seat of the Bank, the appointment of the "ultra-nationalist" Quesnay as General Manager and the poor level of collegiality in the management of the Bank, which, according Einzig, mainly defends the French interests in the Central Banks international relations. The failure of the 1930-1931 discussions between France and partners around the bank of International Settlements and the Gold Committee of the League of Nations are also attributed to the negative attitude of France which had at this time a leading role in both institutions.

Few success of cooperative attempts

"The negotiations between the British and French Treasuries in January 1931 were not the only attempts to reconcile the conflicting interests of the two countries" (*Ibid*, p. 57). Later in the year, during the crisis of the Sterling, Einzig also describes the lack of real cooperation between Bank of England and *Banque de France*. Einzig relates for example the credit proosed by the *Banque de France* to the Bank of England during the summer 1931. At this time, the *Banque de France* objectively participated to the defense of the Sterling but in such a way that Montagu Norman and the Bank of England staff considered French intervention as very humiliating. A first then a second credit were finally accepted by the bank of England to defend the Sterling.

In other parts of the book, Einzig presents episodes of strong rivalry between France and UK with as objective for each Central Bank to impose internationally: as Einzig is evidently more severe with French free-riding attitudes, he particularly points out the case of "financial diplomacy" corresponding to the French interventions in Hungary, clearly oriented to attract Hungary to the influence of Germany and Italy. France becomes according Einzing the "Europe's financial dictator" when Austria and Germany are also obliged to accept the support of *Banque de France* and the associated condition to drop their Customs Union scheme.

Einzig presents with humour the suspension of the convertibility of the Sterling as an example of the game called "*Ombre* in which the player who holds no trumps is in a stronger position than the player who holds them all (*Ibid.*, p. 122). "It is true that after the suspension of the gold standard London was not in a position to give assistance to other countries any more than she was during the period of her struggle to save sterling. On the other hand, the French hopes of dictating British foreign policy had definitively been frustrated" (*Ibid.*, p. 123). Einzig reminds that the French press echoes to the tacit willingness of the French politics and Central bankers to help UK to stabilize the pound at 100 francs. "The stabilization of the sterling at such a high level was obviously to the interest of France, as it would have safeguarded the interests of French trade" (*Ibid.*, p. 129). The free flotation

of the sterling is then considered by Einzig as an opportunistic solution of Bank of England, providing immediate disadvantages to France, without being clearly the best solution for UK.

Decentralized management of gold exchange and coordination failures

Paul Einzig considers the suspension of convertibility of 1931 as a "defeat" of course for UK but also and overall for France. The subsequent phases of the monetary history of Europe will confirm his views. France resists only few years against countries and Central Banks which, like UK and the Bank of England, renounce rapidly to gold from 1931. Suppose that Einzig had chosen to write in 1932 another style of book - less polemic and more fundamental -, he would have probably conceded also that the 1925 return to gold of UK and the lack of cooperation between Bank of England and *Banque de France* during this period were other defeats for the two Central Banks and especially for the bank of England. The views of Einzig can be rationalized at the light of modern economic analysis. Retrospectively, the choices of UK and France during this period can be considered as non-cooperative strategies ending up finally to a sub-optimal issues. Both countries are alternatively put in situations where the external reserves of one of them decrease, its financial capacity to influence European reconstruction reduces, its prices reduce, as a consequence of the actions undertaken by the other one. This is typically the situation of a coordination failure in the decentralized management of the gold exchange standard.

3.2 The limits of floating exchanges

> "Broadly defined and in its extreme form, a flexible exchange rate system allows the market forces of supply and demand, free from government intervention, to determine rates. It is with this extreme form of flexibility that Dr. Einzig is most concerned" (Pledge, 1971, p. 446).

The opposition of Paul Einzig to floating rates has its origins in the interwar period and in the way he interprets the collapse of the convertibility during the Great Depression. The failure of Bretton Wood and the return to free flotation motivates in 1971 a new book to Einzig, only two years before his death. The book is an attack against flexible exchange rates regimes. For many of the arguments it develops, it is an old fashioned book: it is considered by the new specialists of exchange rates and international economics as the work of a disoriented and retreated columnist, few in touch with econometric methods or mathematical modeling, and more generally with the new tendencies of macroeconomics.

Among the reviewers of the book, Gert Haller for *The Journal of Money, Credit and Banking*, William Poole for *The Journal of Finance*, Leyland Yeager for *The Journal of International Economics* among others make very negative appreciations of the text. The way Einzig writes is not acceptable for the mainstream macroeconomics of the seventies for two reasons. The first is explicitly formulated by the

three reviewers: the author of *The cases against floating exchanges* mixes without clear distinction and in the same text ideological *a priori* positions (narrow-mind anti-communism, ultra British nationalism...) and more scientific arguments, all presented in a literary form no longer in use in the best economic reviews of the early seventies. The second is more implicit: Einzig is not involved in the debates of the post-war monetary macroeconomics, does not contributes to the elaboration of the new macroeconomics and is probably remained distant from his fundamental evolutions. The assumption of the rationality of actions has progressively been adapted by the new classical school in constitution as a reference in all the theoretical construction; during this time, Einzig continues to use implicit assumptions of imperfect rationality and adaptive behaviors. In a similar way, the "competitive adjustment" of the market is generally perceived as the main stabilizing force able to restore a macroeconomic equilibrium initially perturbed exogenously. Free from any of these generally accepted options, Paul Einzig chooses to present four cases against free flotation. We present these cases without respecting their chronology of exposition in the book but in consideration of their growing level of importance when we read them with our twentieth one century glasses:

- The first argument is rather technical. Einzig is a specialist of forward markets (see Einzig 1937, 1960, 1961): he then tries to imagine what could be the activity of forward markets with flexible rates. As the rates of exchange will probably move more frequently, hedging activities will be associated with all commercial transaction. Similarly, international portfolio management will be connected with operations on the derivative markets able to provide adequate protections against external currencies depreciation. Einzig fears that this increase of demand of facilities for covering the increased exchange risk could not find any counterpart from financial agents. These limitations would reduce trade and other international activities.

- The second argument is more classical and relatively consensual in the early seventies. Einzig knows precisely the discipline effects of gold exchange. With fixed parity (and gold convertibility), an increase of inflation above the international level is automatically followed by a commercial deficit and by gold outflows: this mechanism narrows the monetary basis, and plays the role of an automatic stabilizer for the domestic level of prices. This kind of automatic stabilization no longer exists with flexible exchange rates.

- The third argument of Einzig is the first to be formulated in the book: it is also one of the oldest cases against flexibility. With flexible rates of exchanges, the volatility of exchange rates increases for most countries. This enhanced volatility generates counterproductive macroeconomic effects and has to be managed by a very efficient financial system. "Speculative influences, by causing exchanges to deviate considerably from their trade equilibrium level, would play a much distributing role under floating exchanges than they play under stable changes. Under fixed parities speculators are apt to operate both ways, as many of them are inclined to expect the authorities to be able to maintain existing parities... Under floating rates, on the other hand, even influences of

events of relatively small importance, which under fixed parities would not give rose to trigger off strong speculative trends in exchange rates in anticipation of their unrestrained effect on the floating exchange rate. Although under fixed parities occasional devaluations or revaluations are apt to cause major changes in the economic system, similar troubles are liable to occur much more frequently under floating rates, after each major movement, and their extent is apt to be more considerable. While the extent of changes in parities is nowadays usually kept down to a minimum, there is virtually no limit to exaggerated exchange movements under floating rates" (Einzig, 1970, pp. 82-83).

- The last argument of Einzig is that speculation is destabilizing with floating exchange rates: "Any speculative depreciation of a floating exchange tends to create its own justification even if it was originally not justified. Widely fluctuating exchange rates are apt to change their own equilibrium levels instead of merely adapting themselves to equilibrium levels. The operation of this principle was clearly discernible during the period of floating exchanges that followed the First World War. Very often depreciations were not a consequence of a decline of their equilibrium level caused by domestic inflation but their cause" (Einzig, 1970, p. 97).

The first argument is considered as unacceptable by quite all reviewers . The more convincing refutation of it is probably formulated by Heller who notes that in the hedging activity, a "loss for one party (the additional cost due to a spread between spot and forward rates) is automatically a gain for the other" (Heller, 1972, p. 1021). Heller illustrates his assertion by the following example: "Consider a situation when the forward rate of a currency is considerably below the spot rate. Covering indeed involves additional costs for an exporter; but the reverse holds for an importer of the same country. For him, the situation is highly favorable since he obtains the needed foreign exchange at a low price. As a consequence this would tend to raise imports which in turn would increase the demand for forward exchange. The result is, among other things, that a substantial fall of the forward rate is prevented" (*ibid*).

The second argument of Einzig is without doubt one of the more acceptable by the academic readers of the early seventies. Inflation is then a sensible subject and one of the reasons of the reluctance of many countries to adopt floating exchange rates is the fear from uncontrolled inflation, at a period where the indexation effects between wages and prices are very strong. The reaction of William Poole, then member of the Federal Reserve System Board of Governors is symptomatic of the weakness of the answer provided by the new defenders of flexibility to the case: "For the United Kingdom, who can say with assurance that Einzig is wrong? There can be little doubt that the 'stop' in postwar 'stop-go' has been the result of balance-of-payments difficulties" (W. Poole, 1971, p. 829). Poole then seems in difficulty to refute rationally the general relevance of the argument: "The discipline argument is actually counter-productive for those who want to argue against inflation. Voters and politicians know that curing deficits will not necessarily cure inflation and so

they feel that the discipline argument is phony" (*ibid.*). The motive of refutation that Poole does not find immediately (or does not want to develop in *The Journal of Finance*) is that when capital inflows can compensate in a quite automatic way the commercial deficit of a country (this is the case for instance for many developed countries today), the currency depreciation is relatively moderate or null when an increase of commercial deficit occurs. In the countries satisfying this condition - those with developed and attractive financial markets - the monetary authorities can then concentrate on controlling inflation, without considering the (limited) evolutions of external exchange rates.

The presentation of the third argument of Einzig is made confused by the overlap of three different issues: the definition of the "equilibrium exchange rate", the relation between equilibrium and current rates and the question of the volatility of the nominal rate of exchange. The "equilibrium exchange rate" is a new concept: when Einzig writes his book, he does not perceive with sufficient precision the content of the notion. Einzig considers irrelevantly that this rate should balance commercial, capital, speculative, and arbitrage international movements and concludes that the equilibrium exchange rate is "so remote as to be virtually nonexistent" (Einzig, 1971, p. 56). The point is noted by Haller, Poole and others commentators, themselves considering that the equilibrium rate balances the sum of all these movements. Poole is probably the more severe on the second question: "Einzig has simply confused the logical statement, 'There exists a rate that would balance imports and exports' with an empirical statement of the form, 'The sterling-dollar exchange rate existing last year balanced U.K. imports and exports'" (Poole, 1971, p. 828). Once distinguished from the other ones, the question of the volatility is the more interesting. "Speculative influences, by causing exchanges to deviate considerably from their trade equilibrium level, would play a much distributing role under floating exchanges than they play under stable changes. Under fixed parities speculators are apt to operate both ways, as many of them are inclined to expect the authorities to be able to maintain existing parities... Under floating rates, on the other hand, even influences of events of relatively small importance, which under fixed parities would not give rose to trigger off strong speculative trends in exchange rates in anticipation of their unrestrained effect on the floating exchange rate. Although under fixed parities occasional devaluations or revaluations are apt to cause major changes in the economic system, similar troubles are liable to occur much more frequently under floating rates, after each major movement, and their extent is apt to be more considerable. While the extent of changes in parities is nowadays usually kept down to a minimum, there is virtually no limit to exaggerated exchange movements under floating rates" (Einzig, 1970, p. 82-83). The evidence of the last decades cannot deny the argument of Einzig: the number and the representativity of Currency Unions, Monetary Zones, Currency Boards and other fixed currency regimes around the world prove that flexible rates are still considered as generating more counterproductive effects in term of volatility than advantages in terms of capacity for the domestic monetary authorities to define purely internal goals for their monetary policy.

Is speculation stabilizing or destabilizing? The question is still in debate. The efficient market assumption has defended the stabilizing speculation assumption. In many circumstances, observation confirms this view. But we know theoretically or have observed empirically many situations, associating for instance different types of behaviors, or supposing an heterogeneous information among market participants, where speculation is destabilizing. In some recent circumstances (for instance the Mexican or the Asian crises), destabilizing forms of speculation affected external exchange market.

3.3 How to manage currency?

> "It is an extremely difficult task to steer halfway between the Scylla of undue rigidity and the Charybdis of undue flexibility. From the point of view of maintaining the Bretton Woods system, it is equally important to avoid getting into mentality that changes of parities don't matter, and to avoid getting into a mentality that such changes must be prevented at all costs regardless of the extent of any prevailing fundamental disequilibrium" (Einzig, 1970, p.178).

Monetary policy is "the official effort to increase the advantages of the monetary system or to reduce his disadvantages" (Einzig, 1954, p. 51). This is a pragmatic definition that Einzig illustrates by the views he develops in his 1954 reference book, who will be read by generations of young students around the word, before the new forms of the quantity theory of money finally imposes with the new version simultaneously prepared by D. Patinkin in his seminal papers. As a first sign of this pragmatism, a discussion around the conceptions of George Friedrich Knapp in the chapter seven of the book. Einzig then considers that "the State authority has immense power in determining the value of the money" but also that "a great deal is required to achieved that end, in the form of the monetary policy decisions and their application". Another way to make these considerations more relative is to precise that "if Governments are prepared, rightly or wrongly, to sacrifice every other consideration for the sake of a policy aiming at maintaining the value of money, that policy is ofter able to achieve its end" (Ibid., pp. 86-87). A second mark of the same pragmatism is the title of his first analytical chapter: "The pursuit of internal and external stability". Even if internal stability seems nowadays the first goal for the developed countries and external stability the main objective for over-developed and emerging countries, those two goals indeed still coexist in every monetary system. In particular, internal stability is expected as a consequence of a stable external value of domestic currency when fixed pegs are chosen while external stability is a consequence of the capacity to control internal prices when external flexibility is chosen.

Einzig then presents ten "ends of monetary policy" in as much different chapters. Among them, it is funny to see that "the policy of raising prices" is the first on the list, with many examples referring for instance to the situation in UK in between 1945 and 1951. It is interesting to read that Einzig presents not only the traditional arguments of the accomodationists but also an amazing reverse of the

usual argument of the new classical theory about the rile of expectations: "while high prices may in given circumstances discourage buying, increasing prices tend to induce producers, wholesalers, retailers, and consummers to buy before a further rise occurs. The pursuit of a policy of higher prices is therefore apt to kill two birds with one stone. It noit only ensure an increase of the output, but secures a market for a larger output" (*Ibid.*, p. 106). Obviously, this inflationary policy, as other ones, cannot be definitive and Einzig presents in the following chapter the strict opposite policy consisting in "raising the value of money", presenting it as an "ideal policy from the consumer's point of view". For Einzig, probably because, inside the Commonwealth area, UK is not so affected by international prices, the main advantage of an internal rise of the value of money (a fall of prices) is to allow industrial selection where only the more efficient units can survive. The reader feels at this stage that Einzig - the academic author - is finally reluctant to impose to Einzig - the columnist - the conclusion that this "natural selection" could be efficient in the long run.

After Einzig publishes in 1972 under the title A Textbook on Monetary Economics (Einzig, 1972) a new version of his 1954 Pelican book. Twenties years after, Einzig views - still reflecting the same pragmatism - seem however as atemporal, unable to answer with relevance to the new dominating monetarist views. Even when he considers new monetary events and debates and when the arguments remain the same, Einzig cannot convince the new generation of specialists: the methods have changed in macroeconomics, micro-founded models and econometric tests become progressively two necessary ingredients of all scientific paper or book and Einzig is obviously reluctant to accept form himself these changes in practices. An exhaustive presentation of the different objectives and means of monetary policy appeared in 1954 as a mark of openness and pragmatism but the same content is now considered as a sign that the author is unable to integrate the last advances of macroeconomics which give more credibility to the new quantity theory of money defended by Don Patinkin in microeconomic or micro-founded settings and by Milton Friedman in more aggregated presentations. With the success of the new classical school some years after, inflation targeting became the only objective of monetary policy, the last debates then concentrating on the relevant transmission channels of the policy. With the slowdown of the economies of the developed countries from the early 2000 and the succession of financial crises, a new pragmatism seem however emerging, at least in the practices of Central Bankers: if the textbook of Einzig gives obviously no solutions to the multistage financial crisis that we cross from many years now, it encourage the specialists to open their mind to imaginative actions and measures. Under the condition of being consistent with the management a stable currency, these actions could have real effects more adapted with a moving environment.

4 Conclusion

Paul Einzig will probably never occupy a great place in the History of Economic Analysis textbooks. Despite his French thesis, he is quite autodidact in economics and this is a strong limitation for him, especially as it concerns the methodology

of research. For this reason, his books and articles are classically organized in topics and concerns but do not integrate a clear distinction between assumptions, methodologies and results at a time when this kind a scientific practice generalizes in Economics. A second difficulty to access to his books is the polemical style that Paul Einzig uses in a part of them. This is a by-product of his work of columnist and probably also, as Einzig reveals it in his memories (Einzig, 1960a), the sign of officious "campaigns" motivated by the financial (and sometimes political) interests of UK, and to which Einzig clearly participates from the thirties to the fifties. The third and last imperfection of his writings is that they are excessive in number, in extent, and do not avoid many repetitions.

As a chronicler of the South-East European countries monetary and financial events, Einzig has clearly been frustrated by the same J.M. Keynes who opened him the doors of *The Economic Journal* and later motivated his interest in forward exchange market. Because there were few readers for these subjects in UK, *The Economic Journal* rejected Einzig papers on Central or Eastern Europe, after having previously accepted his articles on the financial situations in Russia and in Romania. Einzig then oriented his interest to other subjects which made his future reputation. We have chosen to choose two of these subjects in this paper: the covered interest rate parity and the choice of the good exchange rate system. The first subject is narrow and rather technical while the second has opposite characteristics. Both of them however contribute to analyzing the monetary and financial interactions inside developed economies in a word combining free exchange and regulatory institutions. We are still in the same style of environment but a larger number of institutions are international ones and the regulations they propose are devoted to apply at the same level. This is the way European Community currently experiences to overcome the imperfections of the monetary arrangements that Einzig observes, sometimes defends but frequently criticizes for their failure to coordinate harmoniously the external relations of the leading economies of his time.

References

Abeysekera, Sarath P., and Turtle, Harry J., 1995, "Long-run relations in exchange markets: a test of covered interest rate parity", Vol. 18, No. 4, pp. 431-447.

Altman, Oscar L., 1965, "The Euro-Dollar System: Practice and Theory of International Interest Rates. By Paul Einzig", *The Journal of Political Economy*, Vol. 73, No. 3, June, pp. 305-306.

Balke, Nathan S., and Wohar, Mark E., 1998, "Nonlinear dynamics and covered interest rate parity", *Empirical Economics*, Vol. 23, No. 4, pp. 535-559.

Bhargava, Vivek, Dania, Akash, and Malhorta, D.K., 2011, "Covered Interest Rate Parity Among BRIC Nations", *Journal of Business and Ecoomic Studies*, Vol. 17, No. 1, Spring, pp. 37-47.

Boyer-Xambeu, Marie-Thérèse, 1997, "Spéculation et parité des taux d'interêt sans change à terme dans 'La theorie des changes etrangers' de G.-J. Goschen (1861)", *Cahiers d'Economie Politique*, Vol. 29, pp. 21-34.

Cagan, Phillip, 1991 "Expectations in the German hyperinflation reconsidered", *Journal of International Money and Finance*, Vol. 10, pp. 552-560.

Coffey, Niall, Hrung, Warren B., Sarkar, Asani, 2009, "Capital Constraints, Counterparty Risk, and Deviations from Covered Interest Rate Parity", *Federal Reserve Bank of New York Staff Reports*, Staff Report No. 393, September

Eastman, H. C., 1962, ''*A Dynamic Theory of Forward Exchange.* By Paul Einzig", *The Canadian Journal of Economics and Political Science / Revue Canadienne d'Economique et de Science Politique*, Vol. 28, No. 4, November, pp. 608-609.

Einzig, Paul, 1920a, "The Monetary Economy of Bolshevism", *The Economic Journal*, Vol. 30, No. 117, March, pp. 123-126.

Einzig, Paul, 1920b, "Note on Recent Currency Events in Rumania", *The Economic Journal*, Vol. 30, No. 120, December, pp. 556-559.

Einzig, Paul, 1927a, "The Gold Points of the Exchanges To-Day", *The Economic Journal*, Vol. 37, No. 145, March, pp. 480-483.

Einzig, Paul, 1927b, "Present and Future Gold Export Points", *The Economic Journal*, Vol. 37, No. 147, September, pp. 133-139.

Einzig, Paul, 1928, "International Gold Movements", *The Economic Journal*, Vol. 38, No. 152, December, pp. 662-665.

Einzig, Paul, 1932, *Behind the Scenes of International Finance*, Macmillan, London, Pp. 154, [*first edition 1931*].

Einzig, Paul, 1935, *Bankers, Statesmen and Economists*, Macmillan, London, Pp. 252.

Einzig, Paul, 1937, *The Theory of Forward Exchange*, Macmillan, London, Pp. 520.

Einzig, Paul, 1954, *How Money is Managed? The ends and means of monetary policy*, Penguin Books, London, Pp. 368.

Einzig, Paul, 1960a, In the Centre of Things, Hutchinson of London, Pp. 319.

Einzig, Paul, 1960b, "Some Recent Changes in Forward Exchange Practices", *The Economic Journal*, Vol. 70, No. 279, September, pp. 485-495.

Einzig, Paul, 1961, *A Dynamic Theory of Forward Exchange*, Macmillan, London, Pp. 563.

Einzig, Paul, 1971, *The Case Against Floating Exchanges*, MacMillan, St Martin's Press, London, Pp. 211.

Einzig, Paul, 1974, *A textbook on Monetary Policy*, MacMillan, St Martin's Press, London, Pp. 461.

Fama, Eugene F., 1984, "Forward and spot exchange rates", *Journal of Monetary Economics*, Vol. 14, pp. 319-338.

Frenkel, Jacob, 1977, "The Forward Exchange Rate, Expectations and the Demand for Money: The German Hyperinflation", *American Economic Review*, September, Vol. 67, pp. 653-670.

Frenkel, Jacob A., and Levich, Richard M., 1975, "Covered Interest Arbitrage: Unexploited Profits?", *Journal of Political Economy*, Vol. 83, No. 2, April, pp. 325-338.

Haller, Gert, 1972, "*The Case Against Floating Exchanges*, by Paul Einzig", *Journal of Money, Credit and Banking*, Vol. 4, No. 4, November, pp. 1019-1023.

Janus Fund, The Papers of Paul Einzig, GBR/0014/ENZG,
http://janus.lib.cam.ac.uk/db/node.xsp?id

Lyons, Richard K., 2001, *The Microstructure Approach to Exchange Rates*, MIT Press, Cambridge.

Mancini Griffoli, Tommaso, and Ranaldo, Angelo, 2011, "Limits to arbitrage during the crisis: funding liquidity constraints and covered interest parity", Swiss National Bank, February.

Keynes, John M., 1923, *The Tract on Monetary Reform*, London: Macmillan.

Paya, Ivan, Peel, David A., and Spiru Alina, 2010, "The forward premium puzzle in the interwar period and deviations from covered interest parity", *Economics Letters*, Vol. 108, pp. 55-57.

Peel, David A., and Taylor Mark P., 2002, Covered Interest Rate Arbitrage in the Interwar Period and the Keynes-Einzig Conjecture, *Journal of Money, Credit and Banking*, Vol. 34, No. 1 February, pp. 51-75.

Pippenger, John, 2011, "The solution to the forward-bias puzzle", *Journal of International Financial Markets, Institutions and Money*, April, pp. 296-304

Pledge, Michael T., 1971, "*The Case Against Floating Exchanges.* By Paul Einzig", *The Journal of Developing Areas*, Vol. 5, No. 3, April, pp. 446-447.

Poole, William, 1971, "*The Case Against Floating Exchanges.* By Paul Einzig", *The Journal of Finance*, Vol. 26, No. 3, June, pp. 827-829.

Robinson, Joan, 1936, "*Bankers, Statesmen and Economists.* By Paul Einzig", *The Economic Journal*, Vol. 46, No. 181, March, pp. 122-123

Strange, Susan, 1973, "*The Destiny of Gold*, By Paul Einzig., *The Destiny of the Dollar.* By Paul Einzig., *International Interest Rate War.* By Eric Chalmers", *International Affairs*, Vol. 49, No. 1, January, pp. 86-87.

Yeager, Leyland, 1971, "Paul Einzig. *The Case Against Floating Exchanges.* Book review.", *Journal of International Economics*, Vol. 1, No 3, pp. 362-365.